Discussion about the paper *Admissible Designs of Debt-Equity Swaps for Distressed Firms: Analysis, Limits and Applications*

Franck Moraux and Patrick Navatte

Areski COUSIN

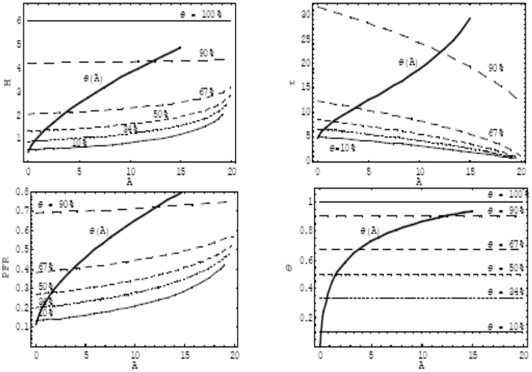
Université Claude Bernard Lyon 1,
ISFA

AFFI Paris Finance International Meeting - 20 December 2007

Admissible designs of debt-equity swaps

- As creditors may bankrupt the firm, they can design the debt equity swap so as to maximize their wealth.
- 3 parameters under the control of creditors
  - A: the amount of face value forgiven for equity
  - θ: proportion of equity in exchange of debt
  - τ: new maturity of the distressed debt
- Parameters of the debt equity swap (A, θ, τ) such that:
  - The swap is admissible: A must be equivalent to the present value of newly issued equity securities
  - The swap maximizes the gain of using a debt equity swap instead of declaring bankrupt
- Three parameters, two constraints

Admissible designs of debt-equity swaps



- The more amount of debt is forgiven, the more creditors benefit from the restructuring scheme
- The probability of being reimbursed of the remaining debt also increases with the amount of debt forgiven for equity.
- But the remaining debt must be supported a longer time

Admissible designs of debt-equity swaps - possible extensions

- Capital structure as in a Black-Scholes-Merton framework
  - The firm's asset value described by a geometric Brownian motion
  - Equity is a call option on the firm value
  - Debt is a zero coupon risky bond
- Consider a Black-Cox first passage model where new defaults can occur before maturity of the debt
  - Motivation - Eurotunnel suffers from two debt restructurings:
    - November 1997 - £8.7 billion debts, £1 billion involve in a debt-equity swap
    - June 2007 - new debt restructuring
  - Issue - Equity is an out-of-the-money option at default time

Admissible designs of debt-equity swaps - possible extensions

- Taking into account coupon payments
  - Failure in interest payments may cause default as for Eurotunnel 1997
- Debt restructuring with convertible bonds or loan participation notes ? Comparison with debt-equity swaps.